

Comet astrometry made at the Skalnaté Pleso Observatory in the year 1986

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Abstract. The paper presents the results of position photographing of comets carried out at the Skalnaté Pleso Observatory in the year 1986. A total of 90 observations of 5 comets are given.

Key words: comets – astrometry

1. Introduction

The presented paper is a continuation of the previous papers which gave the results of positional observations of comets made at the Skalnaté Pleso Observatory (the last paper of this series: Svoreň; 1992) and contains positional comet observations made in the year 1986. The reference stars were selected from the Smithsonian Astrophysical Observatory Star Catalog(1966) and from the Comet Halley Reference Star Catalog (1984). The reduction constants as well as methods of observation and processing and all the other necessary data are not repeated here. They are given in the paper on astrometry of minor planets in this volume (Svoreň, Pittich; 1993).

A total of 90 accurate positions of 5 comets, arranged according to the definitive designation of the objects, are given. The list of collaborators is given, together with their share in photographing, measuring and reducing the positions.

2. Positions of comets

The data have been arranged according to individual comets in the order of their definitive designation. The individual columns of the table containing the following:

N - ordinal number of observation,
Date U.T. - date and time of the middle of the exposure,
 $R.A._{1950}$ - right ascension for equinox 1950.0 (in h,m,s),
 $Decl._{1950}$ - declination for equinox 1950.0 (in $^{\circ},',''$),
T - the exposure time in minutes,

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A - the difference between independent determinations of R.A. in arc seconds,
 B - the difference between independent determinations of Decl. in arc seconds.

Notes: N. 30 - poor atmospheric conditions, N. 45, 46, 47 - measurement difficult.

N	Date U.T.	R.A. ₁₉₅₀	Decl. ₁₉₅₀	T	A	B	
Periodic Comet Shoemaker 3 (1985 XVIII)							
1	1986 Feb.	4.86076	9 33 49.38	+23 39 47.4	30	0.7	0.2
2	1986 Feb.	4.91667	9 33 48.19	+23 40 09.0	30	0.4	0.6
3	1986 Feb.	5.92212	9 33 32.81	+23 46 20.1	35	0.6	0.6
Periodic Comet Halley (1986 III)							
4	1986 Jan.	5.68125	22 04 28.81	- 3 36 35.2	1	0.4	0.2
5	1986 Jan.	8.72187	21 58 19.23	- 4 13 29.1	1	1.4	1.6
6	1986 May	1.83455	10 52 02.35	-17 36 07.5	3.5	1.2	0.8
7	1986 May	1.86736	10 51 56.30	-17 34 27.5	3	1.1	0.6
8	1986 May	2.83576	10 49 09.40	-16 47 57.9	3	0.5	0.5
9	1986 May	2.87604	10 49 02.80	-16 46 03.9	3	0.8	0.2
10	1986 May	3.81562	10 46 35.73	-16 03 56.4	3	0.3	0.3
11	1986 May	3.85417	10 46 29.97	-16 02 17.2	3	0.2	1.0
12	1986 May	4.81701	10 44 13.14	-15 21 57.0	3	0.0	0.1
13	1986 May	4.85660	10 44 07.65	-15 20 21.6	3	0.8	0.0
14	1986 May	5.82535	10 42 02.54	-14 42 28.1	3	0.5	0.4
15	1986 May	5.86389	10 41 57.65	-14 40 58.9	3	0.2	0.3
16	1986 May	6.82118	10 40 05.39	-14 06 00.8	3	1.3	1.0
17	1986 May	6.85833	10 40 01.20	-14 04 41.8	3	1.1	0.9
18	1986 May	7.82361	10 38 18.15	-13 31 36.9	2	0.2	0.3
19	1986 May	7.87292	10 38 12.95	-13 29 59.2	2	0.1	0.3
20	1986 May	10.83333	10 33 51.00	-12 00 58.7	2	0.8	1.0
21	1986 May	10.86771	10 33 48.27	-12 00 01.7	2	0.2	0.8
22	1986 Nov.	30.16875	11 39 58.02	-14 51 12.9	36	0.2	0.6
23	1986 Dec.	4.12465	11 39 31.29	-15 05 52.4	30	0.4	0.4
24	1986 Dec.	4.16123	11 39 30.59	-15 06 07.0	30	0.2	0.0
25	1986 Dec.	6.09630	11 39 12.64	-15 13 04.0	35	0.3	0.3
26	1986 Dec.	6.12257	11 39 12.34	-15 13 09.9	35	0.2	0.1
27	1986 Dec.	6.14896	11 39 11.90	-15 13 21.6	35	0.5	0.5
28	1986 Dec.	8.10012	11 38 50.00	-15 20 05.7	30	0.3	0.1
29	1986 Dec.	8.12257	11 38 49.75	-15 20 10.7	30	0.4	0.1
30	1986 Dec.	8.14479	11 38 49.36	-15 20 12.4	30	1.2	0.0

N	Date U.T.	<i>R.A.</i> ₁₉₅₀	<i>Decl.</i> ₁₉₅₀	T	A	B
Comet Churyumov-Solodovnikov (1986 IX)						
31	1986 Aug.	2.96001	21 10 02.29	-24 15 39.3	30	0.8 0.3
32	1986 Aug.	3.00642	21 09 55.16	-24 17 18.6	30	0.8 0.1
Comet Sorrells (1987 II)						
33	1986 Nov.	3.84317	5 29 34.66	+27 19 36.9	20	1.3 1.0
34	1986 Nov.	3.88241	5 29 25.47	+27 19 58.0	20	1.2 1.4
35	1986 Nov.	4.85208	5 25 33.04	+27 29 47.4	22	0.5 0.7
36	1986 Nov.	4.89097	5 25 23.27	+27 30 11.5	30	0.6 0.3
37	1986 Nov.	8.90729	5 07 37.94	+28 08 07.5	15	0.6 0.8
38	1986 Nov.	8.95174	5 07 25.26	+28 08 29.1	15	0.6 0.7
39	1986 Nov.	9.93958	5 02 37.11	+28 16 51.4	10	0.1 0.7
40	1986 Nov.	9.96181	5 02 30.52	+28 17 00.9	10	0.1 0.3
41	1986 Nov.	11.13542	4 56 34.53	+28 26 13.8	10	0.1 1.0
42	1986 Nov.	11.15972	4 56 26.93	+28 26 24.5	10	0.9 0.9
43	1986 Nov.	12.09167	4 51 34.00	+28 33 06.3	10	1.0 0.8
44	1986 Nov.	12.11250	4 51 27.50	+28 33 15.4	10	1.3 0.8
45	1986 Nov.	28.84201	3 04 24.60	+27 52 21.0	15	0.2 1.0
46	1986 Nov.	28.86771	3 04 14.02	+27 52 00.2	15	0.7 0.2
47	1986 Nov.	29.90556	2 57 07.12	+27 36 48.1	10	0.0 1.1
48	1986 Dec.	3.76476	2 31 18.57	+26 28 33.9	10	0.2 0.4
49	1986 Dec.	3.80457	2 31 03.04	+26 27 47.4	10	0.6 0.1
50	1986 Dec.	5.78993	2 18 22.38	+25 46 37.3	10	0.7 0.3
51	1986 Dec.	5.85984	2 17 56.11	+25 45 06.6	10	0.2 0.5
52	1986 Dec.	7.89306	2 05 31.07	+24 59 44.9	10	0.8 0.6
53	1986 Dec.	7.93021	2 05 17.76	+24 58 52.4	10	0.5 0.3
Comet Wilson (1987 VII)						
54	1986 Aug.	7.93669	22 17 43.12	+24 56 31.3	25	0.2 0.5
55	1986 Aug.	7.98206	22 17 38.47	+24 56 14.7	25	0.4 0.8
56	1986 Aug.	11.87546	22 10 34.50	+24 30 34.5	20	0.0 0.1
57	1986 Aug.	11.91111	22 10 30.46	+24 30 19.3	20	0.2 0.4
58	1986 Aug.	26.81736	21 40 23.12	+21 53 06.8	20	0.3 0.0
59	1986 Aug.	26.84583	21 40 19.33	+21 52 43.1	20	0.4 0.8
60	1986 Sep.	3.84097	21 23 08.27	+19 48 53.1	10	1.3 1.2
61	1986 Sep.	3.88437	21 23 02.70	+19 48 05.4	10	0.6 0.1
62	1986 Sep.	5.79514	21 18 56.69	+19 14 41.1	10	0.8 0.3
63	1986 Sep.	5.82431	21 18 52.99	+19 14 11.5	10	0.2 0.5

N	Date U.T.	<i>R.A.</i> ₁₉₅₀	<i>Decl.</i> ₁₉₅₀	T	A	B
Comet Wilson (1987 VII) - cont.						
64	1986 Sep.	8.79456	21 12 33.61	+18 19 34.7	10	0.0 0.9
65	1986 Sep.	8.85660	21 12 25.75	+18 18 25.1	10	0.2 0.8
66	1986 Sep.	25.74468	20 39 21.70	+12 24 51.9	8	0.4 0.0
67	1986 Sep.	25.77685	20 39 18.34	+12 24 09.4	8	0.2 0.4
68	1986 Sep.	28.93437	20 33 55.32	+11 13 44.0	10	0.5 0.2
69	1986 Sep.	28.96528	20 33 52.21	+11 13 04.6	10	0.2 0.9
70	1986 Oct.	1.77222	20 29 21.01	+10 10 20.8	8	0.4 0.5
71	1986 Oct.	1.81736	20 29 16.75	+10 09 20.1	8	0.3 0.2
72	1986 Oct.	2.80729	20 27 44.84	+9 47 15.1	8	0.2 0.5
73	1986 Oct.	2.84861	20 27 40.94	+9 46 18.7	8	0.1 0.2
74	1986 Oct.	4.77326	20 24 48.00	+9 03 30.9	8	0.4 0.6
75	1986 Oct.	4.81007	20 24 44.79	+9 02 42.5	8	0.9 0.6
76	1986 Oct.	28.76042	19 59 10.55	+0 50 53.1	10	0.2 0.3
77	1986 Oct.	28.79907	19 59 08.91	+0 50 11.9	10	0.4 0.4
78	1986 Oct.	29.78334	19 58 29.27	+0 32 15.1	8	0.2 0.1
79	1986 Oct.	29.81400	19 58 28.10	+0 31 44.3	8	0.3 0.1
80	1986 Oct.	31.71933	19 57 16.21	-0 02 25.6	10	0.2 0.6
81	1986 Nov.	3.71493	19 55 35.65	-0 54 29.1	8	0.1 0.7
82	1986 Nov.	3.78142	19 55 33.62	-0 55 37.8	8	0.6 0.6
83	1986 Nov.	4.72847	19 55 05.02	-1 11 45.7	8	0.0 0.2
84	1986 Nov.	4.78437	19 55 03.42	-1 12 35.0	8	0.3 0.4
85	1986 Nov.	26.69167	19 50 00.01	-6 34 04.3	12	0.2 0.6
86	1986 Nov.	26.73194	19 50 00.06	-6 34 34.4	12	0.6 0.4
87	1986 Nov.	28.69514	19 50 01.68	-6 59 11.6	12	0.0 0.4
88	1986 Nov.	28.72917	19 50 01.74	-6 59 35.5	12	0.4 0.1
89	1986 Nov.	29.69097	19 50 03.99	-7 11 28.2	10	0.6 0.6
90	1986 Nov.	29.72569	19 50 04.03	-7 11 52.0	10	0.1 0.9

3. Reference stars and dependences

The individual columns of the table contain the following:

N - ordinal number of the observation in agreement with the Section 2,
 Numbers of reference stars and dependences

C - Catalogue: S - Smithsonian Astrophysical Observatory Star Catalogue (1966),

H - Comet Halley Reference Star Catalog (Yeomans et al, 1984).

N	Numbers of stars and dependences						C
1	80875	.27867	80947	.43212	80949	.28921	
	80891	.38628	80944	.34275	80963	.27097	S
2	80875	.28138	80947	.42553	80949	.29309	
	80891	.38959	80944	.33828	80963	.27213	S
3	80875	.31672	80947	.32097	80949	.36231	
	80891	.43658	80944	.26398	80963	.29944	S
4	9304	.30595	9317	.31877	9323	.37528	
	9306	.43173	9316	.34443	9332	.22384	H
5	145742	.10787	145806	.54981	145832	.34232	
	145780	.16956	145808	.67524	145841	.15520	S
6	156265	.26395	156324	.34187	156342	.39418	
	156254	.38395	156297	.14614	156368	.46991	
	156276	.31792	156312	.27340	156346	.40868	
	156222	.34781	156307	.17981	156387	.47238	S
7	156265	.27805	156324	.35211	156342	.36984	
	156254	.37575	156297	.17576	156368	.44849	
	156276	.33085	156312	.28589	156346	.38326	
	156222	.34304	156307	.20416	156387	.45280	S
8	156203	.16903	156291	.47908	156293	.35189	
	156205	.30412	156280	.39554	156350	.30034	S
9	156203	.18557	156291	.45060	156293	.36383	
	156205	.32616	156280	.37054	156350	.30330	S
10	156203	.36059	156208	.19390	156293	.44551	
	156190	.27172	156260	.38010	156279	.34818	S
11	156203	.34859	156208	.22035	156293	.43106	
	156190	.28763	156260	.36468	156279	.34769	S
12	156193	.38936	156194	.31102	156279	.29962	
	156179	.39303	156205	.41105	156320	.19592	S
13	156193	.41110	156194	.30208	156279	.28682	
	156179	.41464	156205	.39340	156320	.19196	S
14	156152	.20766	156190	.52292	156241	.26942	
	156160	.30076	156198	.38450	156220	.31474	S
15	156152	.22822	156190	.50506	156241	.26672	
	156160	.31864	156198	.37028	156220	.31108	S
16	156119	.25955	156186	.41309	156188	.32736	
	156148	.29550	156155	.39888	156220	.30562	
	156148	.42323	156165	.39372	156246	.18305	
	156141	.32684	156154	.37896	156232	.29420	S

N	Numbers of stars and dependences						C
17	156119	.27169	156186	.42024	156188	.30807	
	156148	.31594	156155	.38944	156220	.29462	
	156148	.43952	156165	.38451	156246	.17597	
	156141	.34341	156154	.37101	156232	.28558	S
18	156119	.41059	156137	.20643	156186	.38298	
	156067	.32981	156157	.32056	156220	.34963	S
19	156119	.40368	156137	.23549	156186	.36083	
	156067	.32360	156157	.34882	156220	.32758	S
20	156068	.32959	156086	.42654	156143	.24387	
	156066	.22328	156086	.21755	156109	.55917	S
21	156068	.34883	156086	.41155	156143	.23962	
	156066	.23731	156086	.21739	156109	.54530	S
22	156814	.34069	156849	.42781	156874	.23150	
	156792	.28918	156840	.34399	156878	.36683	S
23	156777	.33122	156857	.23275	156874	.43603	
	156792	.32387	156833	.30107	156878	.37506	S
24	156777	.33215	156857	.23411	156874	.43374	
	156792	.32381	156833	.30335	156878	.37284	S
25	156777	.35574	156857	.27375	156874	.37051	
	156792	.31822	156833	.36870	156878	.31308	S
26	156777	.35617	156857	.27423	156874	.36960	
	156792	.31821	156833	.36966	156878	.31213	S
27	156777	.35671	156857	.27544	156874	.36785	
	156792	.31795	156833	.37143	156878	.31062	S
28	156777	.38817	156857	.30971	156874	.30212	
	156792	.32026	156833	.43601	156878	.24373	S
29	156777	.38853	156857	.31014	156874	.30133	
	156792	.32025	156833	.43680	156878	.24295	S
30	156777	.38930	156857	.30998	156874	.30072	
	156792	.32074	156833	.43715	156878	.24211	S
31	190086	.39353	190093	.16702	190175	.43945	
	190074	.46792	190094	.06497	190182	.46711	S
32	190086	.38682	190093	.19913	190175	.41405	
	190074	.50533	190094	.04152	190182	.45315	S
33	77180	.37941	77228	.29663	77367	.32396	
	77171	.48818	77260	.18891	77389	.32291	S
34	77180	.38916	77228	.29996	77367	.31088	
	77171	.49681	77260	.19271	77389	.31048	S

N	Numbers of stars and dependences						C
35	77171	.41689	77174	.31103	77258	.27208	
	77148	.17553	77171	.54590	77280	.27857	S
36	77171	.43261	77174	.31781	77258	.24958	
	77148	.18273	77171	.55593	77280	.26134	S
37	76960	.22226	77008	.35285	77034	.42489	
	76973	.34058	77020	.23688	77030	.42254	S
38	76960	.25912	77008	.34456	77034	.39632	
	76973	.39562	77020	.21072	77030	.39366	S
39	76887	.20060	76949	.51463	77008	.28477	
	76892	.31861	76946	.35903	77020	.32236	S
40	76887	.20946	76949	.51826	77008	.27228	
	76892	.32921	76946	.35945	77020	.31134	S
41	76852	.43047	76892	.28716	76918	.28237	
	76852	.30781	76887	.21115	76894	.48104	S
42	76852	.45119	76892	.28593	76918	.26288	
	76852	.33489	76887	.21311	76894	.45200	S
43	76805	.40902	76833	.34562	76852	.24536	
	76784	.47937	76834	.26631	76894	.25432	S
44	76805	.43643	76833	.35128	76852	.21229	
	76784	.48883	76834	.26787	76894	.24330	S
45	75710	.31610	75742	.42660	75779	.25730	
	75712	.42067	75740	.10337	75772	.47596	
	75726	.63681	75757	.22820	75788	.13499	
	75690	.08963	75712	.55708	75807	.35329	S
46	75710	.34307	75742	.41573	75779	.24120	
	75712	.43972	75740	.11687	75772	.44341	S
47	75640	.22750	75680	.45189	75700	.32061	
	75638	.15389	75677	.35960	75689	.48651	S
48	75431	.50298	75440	.36539	75528	.13163	
	75366	.25305	75437	.41010	75514	.33685	S
49	75431	.53343	75440	.36013	75528	.10644	
	75366	.25766	75437	.43419	75514	.30815	S
50	75284	.49142	75288	.22332	75351	.28526	
	75247	.26304	75323	.51806	75326	.21890	S
51	75284	.52416	75288	.27475	75351	.20109	
	75247	.32542	75323	.54944	75326	.12514	S

N	Numbers of stars and dependences						C
52	75113	.20233	75169	.40501	75177	.39266	
	75110	.19465	75159	.53366	75197	.27169	S
53	75113	.23857	75169	.39348	75177	.36795	
	75110	.20434	75159	.56800	75197	.22766	S
54	90390	.28636	90412	.39743	90473	.31621	
	90403	.32397	90430	.29753	90438	.37850	S
55	90390	.28739	90412	.41166	90473	.30095	
	90403	.34864	90430	.30398	90438	.34738	S
56	90296	.45768	90324	.25660	90370	.28572	
	90283	.44175	90320	.21535	90386	.34290	S
57	90296	.47310	90324	.25299	90370	.27391	
	90283	.45484	90320	.21042	90386	.33474	S
58	89877	.36686	89912	.28559	89991	.34755	
	89874	.44274	89922	.20737	89988	.34989	S
59	89877	.37057	89912	.29202	89991	.33741	
	89874	.45006	89922	.20875	89988	.34119	S
60	89670	.37796	107112	.27835	107155	.34369	
	107067	.24787	89674	.24368	107160	.50845	S
61	89670	.38011	107112	.30588	107155	.31401	
	89674	.24626	107112	.51902	107160	.23472	S
62	107045	.55360	107054	.26222	107112	.18418	
	107025	.41251	107078	.12735	107083	.46014	S
63	107045	.57175	107054	.25757	107112	.17068	
	107025	.43332	107078	.10522	107083	.46146	S
64	106914	.17906	106966	.58965	106972	.23129	
	106923	.36158	106950	.37719	107003	.26123	S
65	106914	.21648	106966	.60950	106972	.17402	
	106923	.41082	106950	.34495	107003	.24423	S
66	106331	.25188	106411	.29828	106423	.44984	
	106361	.39069	106377	.32056	106447	.28875	S
67	106331	.26471	106411	.28359	106423	.45170	
	106361	.39113	106377	.33399	106447	.27488	S
68	106245	.31777	106273	.43443	106377	.24780	
	106219	.29422	106304	.43630	106345	.26948	S
69	106245	.31661	106273	.44485	106377	.23854	
	106219	.30078	106304	.44220	106345	.25702	S
70	125861	.31419	106191	.27316	106249	.41265	
	106137	.34813	106209	.32241	125982	.32946	S

N	Numbers of stars and dependences						C
71	125861	.33740	106191	.26139	106249	.40121	
	106137	.36660	106209	.30396	125982	.32944	S
72	106112	.31861	125850	.30729	106249	.37410	
	106137	.46822	125854	.25004	106257	.28174	S
73	106112	.31616	125850	.32235	106249	.36149	
	106137	.46707	125854	.26320	106257	.26973	S
74	125764	.16914	125796	.45088	125878	.37998	
	125761	.20685	125807	.54302	125902	.25013	S
75	125764	.16212	125796	.47157	125878	.36631	
	125761	.20367	125807	.55795	125902	.23838	S
76	125320	.12721	125366	.22760	125375	.64519	
	125320	.10828	125346	.44359	125382	.44813	S
77	125320	.13608	125366	.24126	125375	.62266	
	125320	.12886	125346	.42804	125382	.44310	S
78	125300	.32979	125346	.36042	125396	.30979	
	125300	.37637	125350	.22259	125382	.40104	S
79	125300	.33818	125346	.35354	125396	.30828	
	125300	.38415	125350	.21689	125382	.39896	S
80	125258	.32994	143981	.45812	125397	.21194	
	143912	.26585	125340	.39500	144019	.33915	S
81	143912	.32093	143960	.25876	143981	.42031	
	143938	.60840	125300	.19034	143989	.20126	S
82	143912	.32114	143960	.27772	143981	.40114	
	143938	.62565	125300	.17380	143989	.20055	S
83	143912	.32675	143949	.37338	143981	.29987	
	143889	.33310	143941	.35953	144019	.30737	S
84	143912	.32744	143949	.38274	143981	.28982	
	143889	.33032	143941	.36916	144019	.30052	S
85	143822	.22744	143874	.48143	143902	.29113	
	143834	.31578	143871	.38984	143904	.29438	S
86	143822	.23049	143874	.47353	143902	.29598	
	143834	.31863	143871	.38410	143904	.29727	S
87	143834	.41324	143874	.17384	143902	.41292	
	143835	.51812	143871	.19057	143929	.29131	S
88	143834	.41576	143874	.16809	143902	.41615	
	143835	.52065	143871	.18647	143929	.29288	S

N	Numbers of stars and dependences						C
89	143834	.40956	143877	.19305	143903	.39739	
	143855	.24694	143876	.32407	143887	.42899	S
90	143834	.41223	143877	.18679	143903	.40098	
	143855	.24905	143876	.31506	143887	.43589	S

4. List of collaborators

Name	Exposures	Measurements	Reductions
G. Červák	48	48	—
L. Kornoš	5	5	5
P. Rychtarčík	37	37	—
J. Svoreň	—	—	85

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